GROUND TRUTH

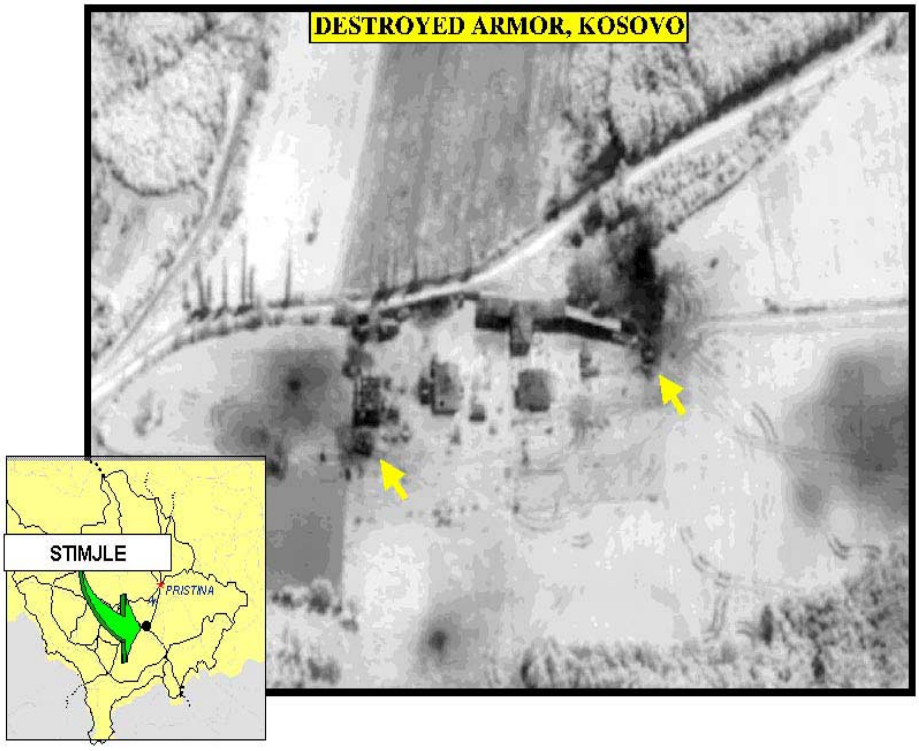
Joint Battle Damage Assessment Newsletter

Issue No. 1

Joint Battle Damage Assessment successfully completed its Joint Feasibility Study earlier this year and was formally chartered as an OSD-directed Joint Test & Evaluation in July 2000. Under the direction of Lieutenant Colonel Fred Biel (USA), the JBDA JT&E is co-located with the Joint Warfighters (JWF) JT&E in Suffolk, VA.

According to Joint Publication 1-02, BDA is the timely and accurate estimate of damage resulting from the application of military force, either lethal or non-lethal, against a predetermined objective. Battle damage assessment can be applied to the employment of all types of weapon systems throughout the range of military operations. BDA is primarily an intelligence responsibility with required inputs and coordination from the operators and is composed of physical damage assessments, functional damage assessments, and target system assessments.

The purpose of JBDA is to improve BDA support to the Joint Force Commander to facilitate operational decision-making. A JBDA-sponsored Joint Working Group (JWG) developed the problem statement. JWG attendees included CINC and defense agency representatives, as well as other BDA subject matter experts from throughout DOD. The problem statement has also been approved by the Joint Staff/J2-T, the DOD's single POC for BDA matters. J2T is also the operational mentor of the JBDA JT&E.



***Problem Statement*: Study of the joint targeting process in support of the Joint Force Commander indicates that, while enhancements have been implemented, battle damage assessment still needs improvement to provide effective and timely assessments of fixed and mobile* targets.**

Based on the problem statement, the following broad issues will be addressed by the JBDA JT&E.

1. How much will changes in the *Mobile Target BDA Process* improve support to the JFC?

2. How much will changes in the *Fixed Target BDA Process* improve support to the JFC?

JBDA focuses on BDA reporting (task accomplishment) and the impact this reporting has on supporting key decision points (mission outcomes). The program is concerned with the ability to provide accurate BDA in time to support these decision points and refining the process that produces them.

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The JBDA JT&E will:

- Identify, test, and assess current BDA processes and procedures and recommend and evaluate enhancements.
- Characterize current BDA training and manpower authorizations for unified command, Service, and agency BDA personnel and recommend and evaluate training improvements.
- Define systems and architectures interoperability and nominate and test fixes.

Measurements will be conducted during testing to determine the joint task force's ability to process and act on information. Emphasis will be placed on measuring the timeliness, accuracy, and completeness of actions required to perform the function of BDA. All functions and terms are extracted from approved Joint Publications, where possible.

JBDA will use the United States Forces Korea (USFK) Ulchi Focus Lens (UFL) exercise as the primary test venue. We observed the exercise in 2000 and will return in 2001 for observation, baseline the exercise in 2002, test enhancements in 2003 and write the final report in 2004. Ramp-up of military and civilian personnel will occur in 2001, as will most test planning. The observation of UFL 00 and 01, along with the experiences of the Joint Warfighters (JWF) JT&E, should enhance JBDA collection activities at UFL 02 and 03. In addition, JBDA will test training enhancements using mini-tests at the Joint Targeting School in Dam Neck, VA.

(Footnotes)

* Mobile targets include maneuver forces as well as high-value relocatable targets such as SCUD TELs.

A Joint Battle Damage Assessment JT&E Legacy Product:

IDEF0 Models of the BDA Process

The purpose of the JBDA JT&E is to improve battle damage assessment support to the Joint Force Commander in order to facilitate operational decision-making. JBDA focuses on BDA reporting and the impact this reporting has on supporting key decision points. The program is concerned with the ability to provide accurate BDA in time to support these decision points and refining the process that produces them.

JBDA will use a variety of qualitative and quantitative analysis methodologies to assess how joint battle damage assessment is currently accomplished, and to identify interoperability and procedural problems. This article discusses our use of one specific analytical tool to accomplish part of this task and produce one of our legacy products.

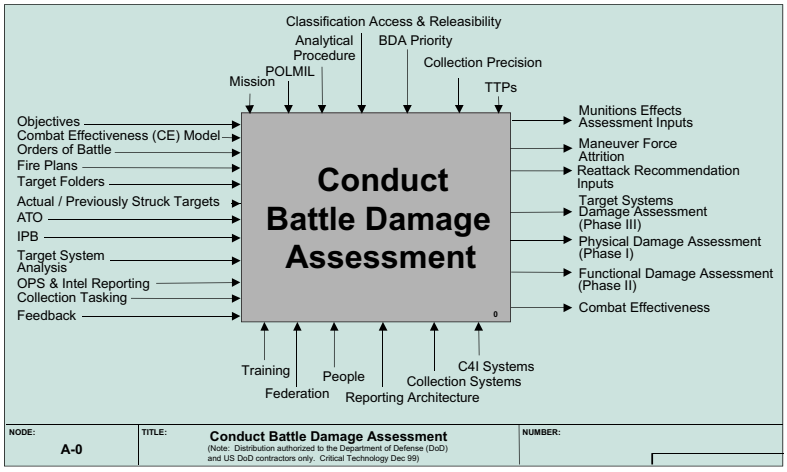
JBDA is using IDEF0 (or Integrated Computer-Aided Manufacturing DEFinition — Level Zero) as a conceptual tool for modeling the BDA process. IDEF0 is a standard DOD modeling technique for performing and managing functional analysis and for documenting baselines for continuous process improvement. The IDEF0 models reside in the BPWin software application used to construct all baseline and enhanced IDEF0. The process follows the steps for creating an IDEF0 model specified in the Federal Information Processing Standards Publication 183, Annex B.

The following diagram illustrates the highest level of the JBDA-developed IDEF0 model of the generic BDA process. It shows the activity "Conduct Battle Damage Assessment" as a single box, with its associated inputs, outputs, controls and mechanisms (ICOMs).

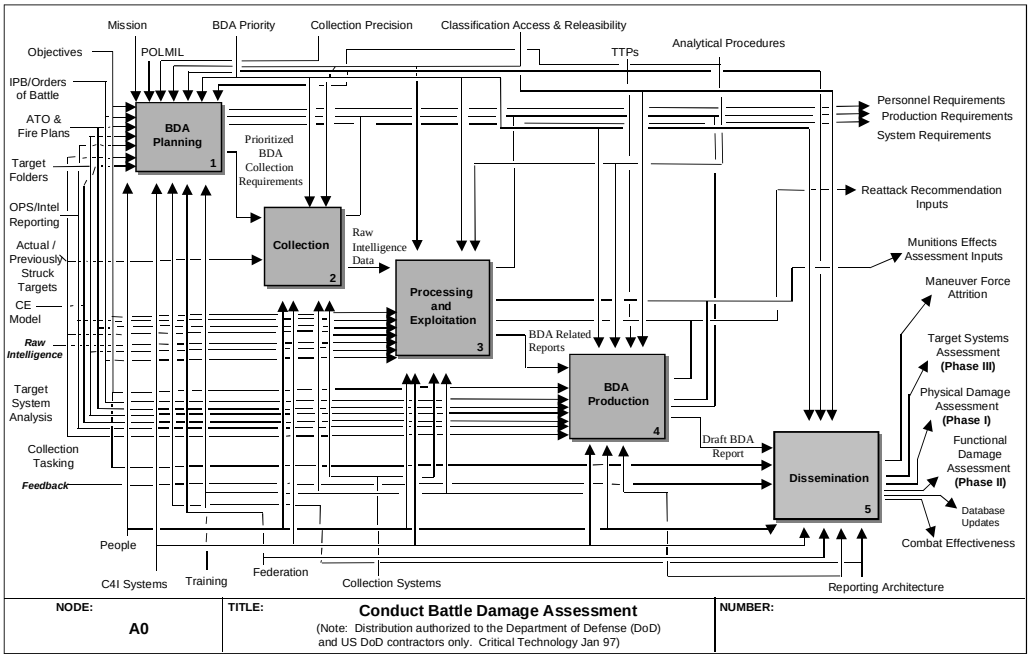
The JBDA IDEF diagram portrays the perceived "As-Is" process, and represents a very "high-level" look at the overall process. This is the starting point (A0) for the remainder of the IDEF models JBDA is developing. JBDA has broken down the process much further in subsequent IDEF0 models. For example, in the next diagram the simplified generic BDA process diagramed above is taken one level deeper. The BDA process is broken down into its five steps: BDA Planning (A1), Collection (A2), Processing and Exploitation (A3), BDA Production (A4), and Dissemination (A5).

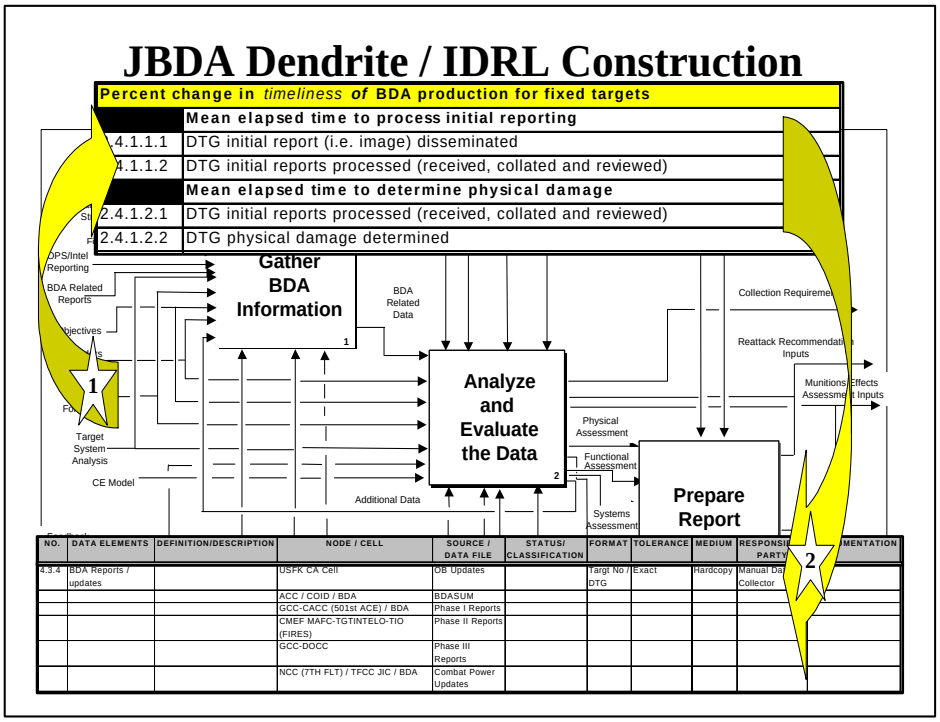
JBDA has completed draft IDEF0 models of the generic BDA process, as well as the national-level BDA process at the National Military Joint Intelligence Center (NMJIC). Each of the five boxes shown above has been decomposed further to provide an additional level of detail. In the case of "BDA Production," which is the main focus of our JT&E efforts, the process has been taken to a third level.

JBDA IDEF0 Diagram



Conduct Battle Damage Assessment





The IDEF0 model provided the background for developing the JBDA dendritic structural decomposition and Integrated Data Requirements List (IDRL). The example below shows the interrelationship of these three products. In this case, the underlying IDEF0 model shows the third level of "BDA Production."

JBDA Performance Measures (MOPs) are the Timeliness, Accuracy, and Completeness with which each step is performed. The inputs for the BDA production activity (1) were used to further refine the performance measures in our dendrite. Our Measures of Effectiveness (MOEs) are the comparative analysis of these MOPs between the baseline and enhanced test activities. Thus, the ICOMs identified in the IDEF0 provided vital information for the development of the IDRL (2), and provided a graphical display of the causal relationships requiring analysis for issue resolution.

The drafts of the generic BDA process and the NMJIC BDA process IDEF0 models are currently being reviewed by the Joint Staff/J2-T, the DOD focal point for targeting and BDA. JBDA will incorporate J2-T comments into the next version of the generic BDA and NMJIC BDA IDEF0 models and provide the completed models to J2-T as a JBDA legacy product.

LEVERAGING THE FORCE: THE JBDA TEST PLAN

The JBDA (JBDA) JT&E is currently refining the JBDA Program Test Plan (PTP). The JBDA PTP directs and focuses the JT&E, helping to identify and evaluate future enhancements utilizing qualitative and quantitative methods to assess the timeliness, accuracy, and completeness of the BDA process. Test articles are potential enhancements envisioned under the PTP that can be implemented and tested within the scope of the JT&E and will address a wide variety of perceived problems within the BDA process. Recommendations based upon the results of these tests will be distributed to concerned agencies as they become available. Improvements may include a variety of proven enhancements in the form of JBDA Legacy Products related to BDA procedures, training, organization, systems and assignment of personnel. Potential enhancements include TTPs for mobile target BDA and the attrition of fielded ground forces order of battle. Combat effectiveness models, improved C3I TTP concerning collaborative tools and collaboration, agency responsibilities, reporting and linked web formats, and tools to assist with training and personnel management of BDA analysts are also potential enhancements. Data concerning such enhancements will also be collected from JBDA mini-tests, interviews, and questionnaires.

The completed PTP will document: 1) baseline testing procedures to establish current BDA processes as executed by Joint Force Commanders and taught at Service schools; 2) enhancement testing procedures to evaluate the utility of implemented enhancements; and 3) the plan for producing the final report and deliverables. BDA processes will be evaluated on a DOD-wide basis during numerous exercises throughout the unified commands and national agencies to include Internal Look and Intrepid

Flow at CENTCOM, Union Flash in EUCOM and US Forces Korea's Ulchi Focus Lens (UFL). Baseline testing will begin in 2002 with UFL serving as the primary test venue. The same exercise in 2003 will serve as the venue for enhancement testing, and the mini-tests will occur concurrently with the enhancement process.

JBDA will use a dual test approach consisting of major exercises such as UFL and supplementing them with a variety of mini-tests at the Joint Targeting School. Major exercise tests such as UFL will provide data on the overall BDA process, while the mini-tests provide the opportunity to test subordinate causation and component BDA issues in a more controlled environment. Moreover, the major exercises and mini-tests will be fully integrated to allow the improvements identified along the way to be included in the planning of subsequent program testing.

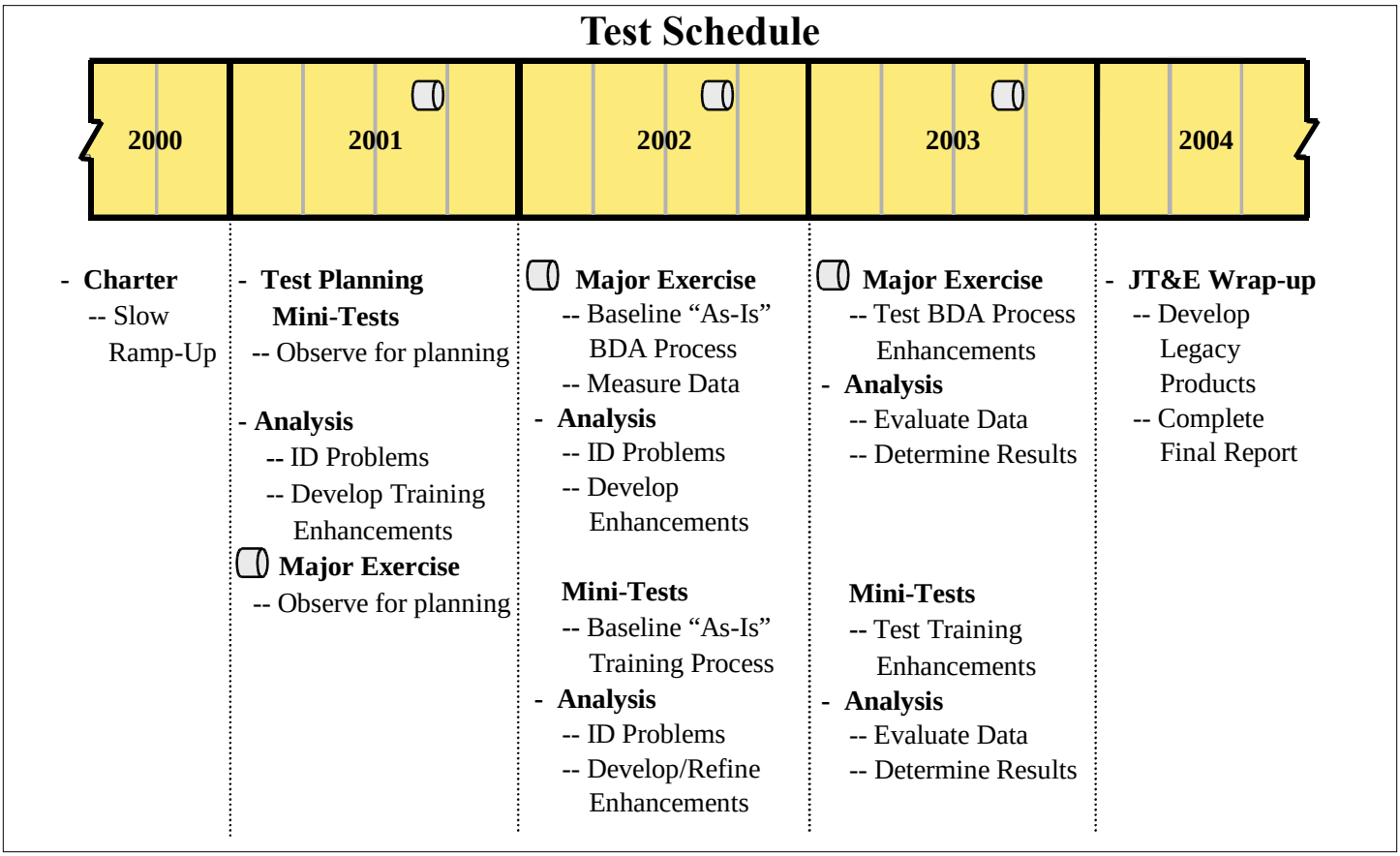
The baseline testing phase will produce the foundation for proposing enhancements to the JBDA process and serve as the starting point for developing the enhancement test's protocol. Baseline testing for JBDA will last roughly one year and will be conducted concurrently with extensive analysis of the data at the JBDA Data Analysis Center in Suffolk, Virginia. The enhancement testing phase of JBDA will begin with UFL in 2003. The test leverages a diverse set of proven test methodologies to build a representative and reliable cross section of the BDA process. Once the data collection is complete from both major exercise and mini-testing, the JBDA JT&E will enter the final phase of the program and produce the final report and associated deliverables.

Moreover, the major exercises and mini-tests will be fully integrated to allow the improvements identified along the way to be included in the planning of subsequent program testing.

Who's Who at JBDA

JBDA Test Director:
Lieutenant Colonel Biel brings his wealth of experience as a Field Artillery Officer to the Joint Battle Damage Assessment program. Commissioned in 1978, LTC Biel

Test Schedule



has served in a variety of billets. His operational experience includes tours as a Firing Battery Commander, Battalion Operations Officer (S-3), cruise missile mission planner, Brigade Fire Support Officer, and Deputy Fire Support Coordinator. LTC Biel served as an instructor at the U. S. Army Intelligence Center where he taught the MI Officer Advanced Course and assisted in the development of Army doctrine. He additionally served as Chief of the Program Development Division at the Army Training Support Center and as the Executive Officer for the Deputy Chief of Staff for Education, Headquarters, Training and Doctrine Command. LTC Biel was initially assigned as the Army Deputy for Joint Battle Damage Assessment in 1999 and became Test Director in November 2000.

JBDA Deputy Test Director:
Major Paul Schubert is a Marine Corps Judge Advocate with a background in Infantry and Intelligence. He was commissioned in the U.S. Army in 1989 and completed training as an Infantry Officer and Airborne Ranger. Major Schubert has served as a Platoon Leader, Company Executive Officer, and Battalion Operations Officer in Infantry and Intelligence units, to include service in OPERATION DESERT SHIELD/DESERT STORM and with the U.N. Command Security Force in Panmunjom, Korea. In 1993, he left active duty to attend law school and was commissioned as a Captain in the U.S. Marine Corps in 1997. Major Schubert has also served as a Judge Advocate in the Office of the Secretary of the Navy and as a Human Intelligence Officer with the Defense Intelligence Agency in OPERATION JOINT GUARD. Major Schubert is a graduate of the U.S. Military Academy, the Catholic University law school, the Naval Command & Staff College, the Postgraduate Intelligence Program, the Naval Justice School, and the Joint Targeting School.

JBDA Sr. ORSA Analyst:
Major Chris Estey joined JBDA in 2000 and previously served as the Armored Cavalry Regiment Squadron Rear Detachment Commander in Bosnia. He also served in J-5, J-3 Crisis Action Team, and as LNO to NATO elements during Joint Task Force Noble Anvil. He served in Naples in 1999 supporting operations in Kosovo. His previous experience also includes service as Squadron Operations Officer, Squadron Executive Officer, AC/RC RTD Brigade Executive Officer, ORSA analyst at TRADOC DCST TDAD, and Armor Company Commander in the Fulda Gap. He holds a Bachelor of Science in Civil Engineering from the U.S. Military Academy and a Master of Engineering Management from Old Dominion University. Major Estey is also a graduate of the Command and General Staff College, the Combined Arms Staff & Service School, the Engineer Officer Advanced Course, and the Armor Officer Basic Course.

JBDA Program Manager:
Jeff McNeil is a former Marine Corps Officer with a background in artillery, logistics and intelligence. In his previous assignment as the Joint Targeting School BDA Course Director, he coordinated with personnel throughout DOD for both regularly scheduled training and CONOP development, and developed the BDA Course currently offered by the Joint Targeting School. Mr. McNeil supported the Office of the Secretary of Defense (OASD (C3I)) BDA Integrated Product Team (IPT), and Air Combat Command's (ACC) BDA TTP development, and participated as a member of the Technical Review Authority for Joint Pub 3-60 Joint Targeting. Mr. McNeil holds a Bachelor of Science in Physics, an M.A. in International Studies, and is currently completing a PhD in the same program. His areas of emphasis are International Security Studies and U.S. Foreign Policy.

Sr. Intelligence Analyst:
John Roe is a retired USAF intelligence officer. Mr. Roe is also a fully qualified USAF Combat Targets Officer and served in that capacity for the Strategic Air Command (SAC), Air Combat Command (ACC), and Combined Forces Command/US Forces Korea (CFC/USFK). He was the principal architect of the Strategic Air Command's BDA policy and procedures for OPERATION DESERT STORM and served as the SAC and ACC command representative to national BDA forums. Mr. Roe was a charter member of the Military Target Intelligence Committee's (MTIC) BDA Working Group (BDAWG) and led a USAF team in a collaborative effort with US Army experts to write the initial post-Desert Storm US national policy and procedures for Battle Damage Assessment. Mr. Roe holds a Bachelor of Science in History and a Master of Science in Strategic Intelligence (Distinguished Graduate) from the Defense Intelligence College.

Sr. Intelligence Analyst:
Scott Repeta is an experienced intelligence professional and a fully qualified USAF Combat Targets Officer with extensive operational experience. He deployed to the Kuwaiti Theater of Operations to support OPERATIONS DESERT SHIELD, DESERT STORM and SOUTHERN WATCH as the Offensive Counter-Air Targeteer and to Naples to support PROVIDE PROMISE as the Chief of Targets. He was the Chief of Intelligence for NATO's first Interim Deployable Combined Air Operations Center (IDCAOC) and was deeply involved in the Partnership For Peace (PFP) exercises. Mr. Repeta also served as the National Military Joint Intelligence Center (NMJIC) BDA Coordinator for OPERATIONS DESERT FOX and ALLIED FORCE, as well as anti-terrorist strikes in 1998. He also participated as a member of the Technical Review Authority for Joint Pub 3-60 Joint Targeting. Mr. Repeta holds a Bachelor of Science in Criminal Justice and a Master of Science in Management.

Senior Intelligence Analyst:
Evan Madsen is a former Army Military Intelligence Officer with signals, imagery and tactical intelligence qualifications and experience. Tactical assignments include battalion intelligence officer for the 1/503rd Infantry Battalion (Light), 2nd Infantry Division. Strategic assignments include being the pilot officer for the National Systems Development Program (focusing on national intelligence system capabilities and limitations), and the first Analysis and Control Element Chief for the Ground Component Command in Korea. Additionally, Mr. Madsen served as the Officer-In-Charge of the Medina Regional Signals Intelligence (SIGINT) Operations Center Technical Control and Analysis Element (MRTCAE) in San Antonio. The MRTCAE provided intelligence of strategic value to national consumers from tactical collectors and vice versa. Before joining the JBDA JT&E team, Mr. Madsen served as the BDA Course Coordinator at the Joint Targeting School. Mr. Madsen holds a Bachelor of Arts in International Relations and History from Boston University and is completing a Masters program in International Studies from Old Dominion University.

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